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PHILLIPS
The Lost Arts.

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THE LOST ARTS



Wendell Phillips

BOSTON
WENDELL PHILLIPS HALL ASSOCIATION
812 WASHINGTON STREET
1892

The People's Tribute to a Great Man

The Wendell Phillips Hall Association is incorporated for the purpose of erecting a Memorial Building in commemoration of the life and public services of Wendell Phillips. Gen. B. F. Butler is President, and ex-Gov. Brackett, Treasurer, with a representative and efficient Board of Directors.

The building is to be centrally located and contain a large hall and several smaller audience, committee and class rooms, constituting essentially a "Cooper Union" for Boston, with memorial features, which will make it stand to the period it commemorates as Pilgrim Hall and Forefathers' Monument to the settlement of Plymouth, or as Bunker Hill Monument, the old South Church and Faneuil Hall to the Revolutionary era.

In appropriate portions of the building will be stained glass windows, paintings and bas-reliefs portraying the most thrilling episodes in Phillips' life, including his famous Faneuil Hall speech; also, scenes from the lives of Wm. Lloyd Garrison, Charles Sumner, John Brown and others, from the shooting of Lovejoy, at Alton, Ill., to the signing of the Emancipation Proclamation by Abraham Lincoln. There will be a museum for the preservation of souvenirs, letters and documents pertaining to the period.

A lectureship resembling those of the Lowell Institute, and classes for social, economic and industrial training, are to be established in connection with the hall, the idea being that too much cannot be done to promote good citizenship and permanence of government. There will also be a well equipped reading-room and library.

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THE LOST ARTS

BY

WENDELL PHILLIPS

BOSTON

WENDELL PHILLIPS HALL ASSOCIATION

812 WASHINGTON STREET

1892

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PREFACE TO "THE LOST ARTS."

IN 1830 the lyceum lecture-system, which has played so important and conspicuous a part in the political and intellectual education of the masses, was started by Horace Mann, Josiah Holbrook, Rev. Dr. Allen, Hon. Amasa Walker, George B. Emerson, and others. Mr. Phillips was one of the first to take part in the movement; and, as early as 1836, he delivered his first lecture. His subjects were almost invariably chosen from the realm of natural science, of which he was always more fond than of the law; and every succeeding winter his name appears as one of the lecturers in the stated courses of the day.

The lecture on "The Lost Arts," which has been conceded to be the most popular and the most charming lecture for the people ever delivered from an American platform, began its career in the winter of 1838-39. Previous to this time Mr. Phillips had spoken chiefly on themes pertaining to chemistry and natural physics, and occasionally on some of the discoveries and inventions in the field of mechanics. Being called upon rather suddenly to speak before a certain audience, it occurred to him that a familiar *résumé* of curious knowledge about the arts, which the ancients knew, and which we can neither rival nor revive, might possibly prove entertaining. Although hastily outlined in a series of notes,

it made an immense hit. It was almost an impromptu delivery: at the time, it was not committed to writing, and, indeed, was never written out by Mr. Phillips during his lifetime. What is even more strange, "The Lost Arts" was rarely, if ever, delivered twice alike, although delivered nearly two thousand times.

About twenty years ago Mr. Phillips was engaged to deliver the lecture in the "Redpath Lyceum." A stenographer was employed to make a verbatim report: it was carefully written out in full, was elegantly bound, and then presented to its author. Mr. Phillips expressed himself exceedingly grateful to his friends, but was much overcome by the reply, —

"We have not done it for your sake, Mr. Phillips, but for posterity."

THE LOST ARTS.

LADIES AND GENTLEMEN :

I AM to talk to you to-night about "The Lost Arts," — a lecture which has grown under my hand year after year, and which belongs to that first phase of the lyceum system, before it undertook to meddle with political duties or dangerous and angry questions of ethics; when it was merely an academic institution, trying to win busy men back to books, teaching a little science, or repeating some tale of foreign travel, or painting some great representative character, the symbol of his age. I think I can claim a purpose beyond a moment's amusement in this glance at early civilization.

I, perhaps, might venture to claim that it was a medicine for what is the most objectionable feature of our national character; and that is self-conceit, — an undue appreciation of ourselves, an exaggerated estimate of our achievements, of our inventions, of our contributions to popular comfort, and of our place, in fact, in the great procession of the ages. We seem to imagine, that whether knowledge will die with us, or not, it certainly began with us. We have a pitying estimate, a tender pity, for the narrowness, ignorance, and darkness of the bygone ages. We seem to ourselves not only to monopolize, but to have begun, the era of light. In other words, we are all running over with a fourth-

day-of-July spirit of self-content. I am often reminded of the German whom the English poet Coleridge met at Frankfort. He always took off his hat with profound respect when he ventured to speak of himself. It seems to me, the American people might be painted in the chronic attitude of taking off its hat to itself; and therefore it can be no waste of time, with an audience in such a mood, to take their eyes for a moment from the present civilization, and guide them back to that earliest possible era that history describes for us, if it were only for the purpose of asking whether we boast on the right line. I might despair of curing us of the habit of boasting, but I might direct it better!

Well, I have been somewhat criticised, year after year, for this endeavor to open up the claims of old times. I have been charged with repeating useless fables with no foundation. To-day I take the mere subject of glass. This material, Pliny says, was discovered by accident. Some sailors, landing on the eastern coast of Spain, took their cooking-utensils, and supported them on the sand by the stones that they found in the neighborhood: they kindled their fire, cooked the fish, finished the meal, and removed the apparatus; and glass was found to have resulted from the nitre and sea-sand, vitrified by the heat. Well, I have been a dozen times criticised by a number of wise men, in newspapers, who have said that this was a very idle tale, that there never was sufficient heat in a few bundles of sticks to produce vitrification, — glass-making. I happened, two years ago, to meet, on the prairies of Missouri, Professor Shepherd, who started from Yale College, and, like a genuine Yankee, brings up anywhere where there is any thing to do. I happened to mention this criticism to him. "Well," says he, "a little practical life would have freed men from that

doubt." Said he, "We stopped last year in Mexico, to cook some venison. We got down from our saddles, and put the cooking-apparatus on stones we found there; made our fire with the wood we got there, resembling ebony; and when we removed the apparatus there was pure silver gotten out of the embers by the intense heat of that almost iron wood. Now," said he, "that heat was greater than any necessary to vitrify the materials of glass." Why not suppose that Pliny's sailors had lighted on some exceedingly hard wood? May it not be as possible as in this case?

So, ladies and gentlemen, with a growing habit of distrust of a large share of this modern and exceedingly scientific criticism of ancient records, I think we have been betraying our own ignorance, and that frequently, when the statement does not look, on the face of it, to be exactly accurate, a little investigation below the surface will show that it rests on a real truth. Take, for instance, the English proverb, which was often quoted in my college days. We used to think how little logic the common people had; and when we wanted to illustrate this in the schoolroom, — it was what was called a *non sequitur*: the effect did not come from the cause named, — we always quoted the English proverb, "Tenderden steeple is the cause of Goodwin Sands." We said, "How ignorant a population!" But, when we went deeper into the history, we found that the proverb was not meant for logic, but was meant for sarcasm. One of the bishops had fifty thousand pounds given to him, to build a breakwater to save the Goodwin Sands from the advancing sea; but the good bishop, — being one of the kind of bishops which Mr. Froude describes in his lecture, that the world would be better if Providence would remove them from it, — instead of building the breakwater to keep out the sea, simply built a

steeple ; and this proverb was sarcastic, and not logical, that "Tenterden steeple was the cause of the Goodwin Sands." When you contemplate the motive, there was the closest and best-welded logic in the proverb. So I think a large share of our criticism of old legends and old statements will be found in the end to be the ignorance that overleaps its own saddle, and falls on the other side.

Well, my first illustration ought to be this material, glass ; but, before I proceed to talk of these lost arts, I ought in fairness to make an exception ; and it is the conception and conceit which lies here. Over a very large section of literature, there is a singular contradiction to this swelling conceit. There are certain lines in which the moderns are ill satisfied with themselves, and contented to acknowledge that they ought fairly to sit down at the feet of their predecessors. Take poetry, painting, sculpture, architecture, the drama, and almost every thing in works of any form that relates to beauty, — with regard to that whole sweep, the modern world gilds it with its admiration of the beautiful. Take the very phrases that we use. The artist says he wishes to go to Rome. "For what?" — "To study the masters." Well, all the masters have been in their graves several hundred years. We are all pupils. You tell the poet, "Sir, that line of yours would remind one of Homer," and he is crazy. Stand in front of a painting, in the hearing of the artist, and compare its coloring to that of Titian or Raphael, and he remembers you forever. I remember once standing in front of a bit of marble carved by Powers, a Vermonter, who had a matchless, instinctive love of art, and perception of beauty. I said to an Italian standing with me, "Well, now, that seems to me to be perfection." The answer was, "To be perfection," — shrugging his shoulders, — "why, sir,

that reminds you of Phidias!" as if to remind you of that Greek was a greater compliment than to be perfection.

Well, now the very choice of phrases betrays a confession of inferiority, and you see it again creeps out in the amount we borrow. Take the whole range of imaginative literature, and we are all wholesale borrowers. In every matter that relates to invention, to use, or beauty, or form, we are borrowers.

You may glance around the furniture of the palaces in Europe, and you may gather all these utensils of art or use; and, when you have fixed the shape and forms in your mind, I will take you into the museum of Naples, which gathers all remains of the domestic life of the Romans, and you shall not find a single one of these modern forms of art or beauty or use, that was not anticipated there. We have hardly added one single line or sweep of beauty to the antique.

Take the stories of Shakspeare, who has, perhaps, written his forty-odd plays. Some are historical. The rest, two-thirds of them, he did not stop to invent, but he found them. These he clutched, ready made to his hand, from the Italian novelists, who had taken them before from the East. Cinderella and her slipper is older than all history, like half a dozen other baby legends. The annals of the world do not go back far enough to tell us from where they first came.

All the boys' plays, like every thing that amuses the child in the open air, are Asiatic. Rawlinson will show you that they came somewhere from the banks of the Ganges or the suburbs of Damascus. Bulwer borrowed the incidents of his Roman stories from legends of a thousand years before. Indeed, Dunlop, who has grouped the history of the novels of all Europe into one essay, says that in the nations of modern Europe

there have been two hundred and fifty or three hundred distinct stories. He says at least two hundred of these may be traced, before Christianity, to the other side of the Black Sea. If this were my topic, which it is not, I might tell you that even our newspaper-jokes are enjoying a very respectable old age. Take Maria Edgeworth's essay on Irish bulls and the laughable mistakes of the Irish. Even the tale which either Maria Edgeworth or her father thought the best is that famous story of a man writing a letter as follows: "My dear friend, I would write you in detail, more minutely, if there was not an impudent fellow looking over my shoulder, reading every word." ("No, you lie: I've not read a word you have written!") This is an Irish bull, still it is a very old one. It is only two hundred and fifty years older than the New Testament. Horace Walpole dissented from Richard Lovell Edgeworth, and thought the other Irish bull was the best, — of the man who said, "I would have been a very handsome man, but they changed me in the cradle." That comes from Don Quixote, and is Spanish; but Cervantes borrowed it from the Greek in the fourth century, and the Greek stole it from the Egyptian hundreds of years back.

There is one story which it is said Washington has related, of a man who went into an inn, and asked for a glass of drink from the landlord, who pushed forward a wineglass about half the usual size; the tea-cups also in that day were not more than half the present size. The landlord said, "That glass out of which you are drinking is forty years old." — "Well," said the thirsty traveller, contemplating its diminutive proportions, "I think it is the smallest thing of its age I ever saw." That story as told is given as a story of Athens three hundred and seventy-five years before Christ was born. Why! all these Irish bulls are Greek, — every one of

them. Take the Irishman who carried around a brick as a specimen of the house he had to sell; take the Irishman who shut his eyes, and looked into the glass to see how he would look when he was dead; take the Irishman that bought a crow, alleging that crows were reported to live two hundred years, and he meant to set out and try it; take the Irishman who met a friend who said to him, "Why, sir, I heard you were dead." — "Well," says the man, "I suppose you see I'm not." — "Oh, no!" says he, "I would believe the man who told me a good deal quicker than I would you." Well, those are all Greek. A score or more of them, of the parallel character, come from Athens.

Our old Boston patriots felt that tarring and feathering a Tory was a genuine patent Yankee fire-brand, — Yankeeism. They little imagined that when Richard Cœur de Lion set out on one of his crusades, among the orders he issued to his camp of soldiers was, that any one who robbed a hen-roost should be tarred and feathered. Many a man who lived in Connecticut has repeated the story of taking children to the limits of the town, and giving them a sound thrashing to enforce their memory of the spot. But the Burgundians in France, in a law now eleven hundred years old, attributed valor to the East of France because it had a law that the children should be taken to the limits of the district, and there soundly whipped, in order that they might forever remember where the limits came.

So we have very few new things in that line. But I said I would take the subject, for instance, of this very material — very substance — glass. It is the very best expression of man's self-conceit.

I had heard that nothing had been observed in ancient times which could be called by the name of glass, — that there had been merely attempts to imitate it. I

thought they had proved the proposition : they certainly had elaborated it. In Pompeii, a dozen miles south of Naples, which was covered with ashes by Vesuvius eighteen hundred years ago, they broke into a room full of glass : there was ground-glass, window-glass, cut-glass, and colored glass of every variety. It was undoubtedly a glass-maker's factory. So the lie and the refutation came face to face. It was like a pamphlet printed in London, in 1836, by Dr. Lardner, which proved that a steamboat could not cross the ocean ; and the book came to this country in the first steamboat that came across the Atlantic.

The chemistry of the most ancient period had reached a point which we have never even approached, and which we in vain struggle to reach to-day. Indeed, the whole management of the effect of light on glass is still a matter of profound study. The first two stories which I have to offer you are simply stories from history.

The first is from the letters of the Catholic priests who broke into China, which were published in France some two hundred years ago. They were shown a glass, transparent and colorless, which was filled with a liquor made by the Chinese, that was shown to the observers, and appeared to be colorless like water. This liquor was poured into the glass, and then, looking through it, it seemed to be filled with fishes. They turned this out, and repeated the experiment, and again it was filled with fish. The Chinese confessed that they did not make them ; that they were the plunder of some foreign conquest. This is not a singular thing in Chinese history ; for in some of their scientific discoveries we have found evidence that they did not make them, but stole them.

The second story, of half a dozen, certainly five, relates to the age of Tiberius, the time of St. Paul ; and

tells of a Roman who had been banished, and who returned to Rome, bringing a wonderful cup. This cup he dashed upon the marble pavement, and it was crushed, not broken, by the fall. It was dented some, and with a hammer he easily brought it into shape again. It was brilliant, transparent, but not brittle. I had a wine-glass when I made this talk in New Haven; and among the audience was the owner, Professor Silliman. He was kind enough to come to the platform when I had ended, and say that he was familiar with most of my facts, but, speaking of malleable glass, he had this to say,—that it was nearly a natural impossibility, and that no amount of evidence which could be brought would make him credit it. Well, the Romans got their chemistry from the Arabians; they brought it into Spain eight centuries ago, and in their books of that age they claim that they got from the Arabians malleable glass. There is a kind of glass spoken of there, that, if supported by one end, by its own weight in twenty hours would dwindle down to a fine line, and that you could curve it around your wrist. Von Beust, the Chancellor of Austria, has ordered secrecy in Hungary in regard to a recently discovered process by which glass can be used exactly like wool, and manufactured into cloth.

These are a few records. When you go to Rome, they will show you a bit of glass like the solid rim of this tumbler,—a transparent glass, a solid thing, which they lift up so as to show you that there is nothing concealed; but in the centre of the glass is a drop of colored glass, perhaps as large as a pea, mottled like a duck, finely mottled with the shifting colored hues of the neck, and which even a miniature pencil could not do more perfectly. It is manifest that this drop of liquid glass must have been poured, because there is no joint. This must have been done by a greater heat

than the annealing process, because that process shows breaks.

The imitation of gems has deceived not only the lay people, but the connoisseurs. Some of these imitations in later years have been discovered. The celebrated vase of the Genoa Cathedral was considered a solid emerald. The Roman-Catholic legend of it was, that it was one of the treasures that the Queen of Sheba gave to Solomon, and that it was the identical cup out of which the Saviour drank at the Last Supper. Columbus must have admired it. It was venerable in his day; it was death for anybody to touch it but a Catholic priest. And when Napoleon besieged Genoa, — I mean the great Napoleon, not the present little fellow, — it was offered by the Jews to loan the Senate three million dollars on that single article as security. Napoleon took it, and carried it to France, and gave it to the Institute. Somewhat reluctantly the scholars said, "It is not a stone: we hardly know what it is."

Cicero said that he had seen the entire Iliad, which is a poem as large as the New Testament, written on a skin so that it could be rolled up in the compass of a nut-shell. Now, this is imperceptible to the ordinary eye. You have seen the Declaration of Independence in the compass of a quarter of a dollar, written with glasses. I have to-day a paper at home, as long as half my hand, on which was photographed the whole contents of a London newspaper. It was put under a dove's wing, and sent into Paris, where they enlarged it, and read the news. This copy of the Iliad must have been made by some such process.

In the Roman theatre, — the Coliseum, which could seat a hundred thousand people, — the emperor's box, raised to the highest tier, bore about the same proportion to the space as this stand does to this hall; and to

look down to the centre of a six-acre lot, was to look a considerable distance. ("Considerable," by the way, is not a Yankee word. Lord Chesterfield uses it in his letters to his son, so it has a good English origin.) Pliny says that Nero the tyrant had a ring with a gem in it, which he looked through, and watched the sword-play of the gladiators, — men who killed each other to amuse the people, — more clearly than with the naked eye. So Nero had an opera-glass.

So Mauritius the Sicilian stood on the promontory of his island, and could sweep over the entire sea to the coast of Africa with his *nauscopite*, which is a word derived from two Greek words, meaning "to see a ship." Evidently Mauritius, who was a pirate, had a marine telescope.

You may visit Dr. Abbot's museum, where you will see the ring of Cheops. Bunsen puts him five hundred years before Christ. The signet of the ring is about the size of a quarter of a dollar, and the engraving is invisible without the aid of glasses. No man was ever shown into the cabinets of gems in Italy without being furnished with a microscope to look at them. It would be idle for him to look at them without one. He couldn't appreciate the delicate lines and the expression of the faces. If you go to Parma, they will show you a gem once worn on the finger of Michael Angelo, of which the engraving is two thousand years old, on which there are the figures of seven women. You must have the aid of a glass in order to distinguish the forms at all. I have a friend who has a ring, perhaps three-quarters of an inch in diameter, and on it is the naked figure of the god Hercules. By the aid of glasses, you can distinguish the interlacing muscles, and count every separate hair on the eyebrows. Layard says he would be unable to read the engravings on Nineveh without strong

spectacles, they are so extremely small. Rawlinson brought home a stone about twenty inches long and ten wide, containing an entire treatise on mathematics. It would be perfectly illegible without glasses. Now, if we are unable to read it without the aid of glasses, you may suppose the man who engraved it had pretty strong spectacles. So the microscope, instead of dating from our time, finds its brothers in the books of Moses, — and these are infant brothers.

So if you take colors. Color is, we say, an ornament. We dye our dresses, and ornament our furniture. It is an ornament to gratify the eye. But the Egyptians impressed it into a new service. For them, it was a method of recording history. Some parts of their history were written, but when they wanted to elaborate history they painted it. Their colors are immortal, else we could not know of it. We find upon the stucco of their walls their kings holding court, their armies marching out, their craftsmen in the ship-yard, with the ships floating in the dock; and, in fact, we trace all their rites and customs painted in undying colors. The French who went to Egypt with Napoleon said that all the colors were perfect except the greenish-white, which is the hardest for us. They had no difficulty with the Tyrian purple. The burned city of Pompeii was a city of stucco. All the houses are stucco outside, and it is stained with Tyrian purple, — the royal color of antiquity.

But you never can rely on the name of a color after a thousand years. So the Tyrian purple is almost a red, — about the color of these curtains. This is a city of all red. It had been buried seventeen hundred years; and if you take a shovel now, and clear away the ashes, this color flames up upon you, a great deal richer than any thing we can produce. You can go down into the

narrow vault which Nero built him as a retreat from the great heat, and you will find the walls painted all over with fanciful designs in arabesque, which have been buried beneath the earth fifteen hundred years; but when the peasants light it up with their torches, the colors flash out before you as fresh as they were in the days of St. Paul. Your fellow-citizen Mr. Page spent twelve years in Venice, studying Titian's method of mixing his colors, and he thinks he has got it. Yet come down from Titian, whose colors are wonderfully and perfectly fresh, to Sir Joshua Reynolds, and although his colors are not yet a hundred years old, they are fading: the colors on his lips are dying out, and the cheeks are losing their tints. He did not know how to mix well. All this mastery of color is as yet unequalled. If you should go with that most delightful of all lecturers, Professor Tyndall, he would show you in the spectrum the vanishing rays of violet, and prove to you that beyond their limit there are rays still more delicate, and to you invisible, but which he, by chemical paper, will make visible; and he will tell you that probably, though you see three or four inches more than three hundred years ago your predecessors did, yet three hundred years after our successors will surpass our limit. The French have a theory that there is a certain delicate shade of blue that Europeans cannot see. In one of his lectures to his students, Ruskin opened his Catholic mass-book, and said, "Gentlemen, we are the best chemists in the world. No Englishman ever could doubt that. But we cannot make such a scarlet as that; and even if we could, it would not last for twenty years. Yet this is five hundred years old!" The Frenchman says, "I am the best dyer in Europe: nobody can equal me, and nobody can surpass Lyons." Yet in Cashmere, where the girls make shawls worth

thirty thousand dollars, they will show him three hundred distinct colors, which he not only cannot make, but cannot even distinguish. When I was in Rome, if a lady wished to wear a half-dozen colors at a masquerade, and have them all in harmony, she would go to the Jews; for the Oriental eye is better than even those of France or Italy, of which we think so highly.

Taking the metals, the Bible in its first chapters shows that man first conquered metals there in Asia; and on that spot to-day he can work more wonders with those metals than we can.

One of the surprises that the European artists received, when the English plundered the summer palace of the King of China, was the curiously wrought metal vessels of every kind, far exceeding all the boasted skill of the workmen of Europe.

Mr. Colton of "The Boston Journal," the first week he landed in Asia, found that his chronometer was out of order, from the steel of the works having become rusted. "The London Medical and Surgical Journal" advises surgeons not to venture to carry any lancets to Calcutta, — to have them gilded, because English steel could not bear the atmosphere of India. Yet the Damascus blades of the Crusades were not gilded, and they are as perfect as they were eight centuries ago. There was one at the London Exhibition, the point of which could be made to touch the hilt, and which could be put into a scabbard like a corkscrew, and bent every way without breaking, like an American politician. Now, the wonder of this is, that perfect steel is a marvel of science. If a London chronometer-maker wants the best steel to use in his chronometer, he does not send to Sheffield, the centre of all science, but to the Punjaub, the empire of the seven rivers, where there is no science at all. The first needle ever made in England

was made in the time of Henry the Eighth, and made by a negro; and when he died, the art died with him. Some of the first travellers in Africa stated that they found a tribe in the interior who gave them better razors than they had; the irrepressible negro coming up in science as in politics. The best steel is the greatest triumph of metallurgy, and metallurgy is the glory of chemistry.

The poets have celebrated the perfection of the Oriental steel; and it is recognized as the finest by Moore, Byron, Scott, Southey, and many others. I have even heard a young advocate of the lost arts find an argument in Byron's "Sennacherib," from the fact that the mail of the warriors in that one short night had rusted before the trembling Jews stole out in the morning to behold the terrible work of the Lord. Scott, in his "Tales of the Crusaders," — for Sir Walter was curious in his love of the lost arts, — describes a meeting between Richard Cœur de Lion and Saladin. Saladin asks Richard to show him the wonderful strength for which he is famous, and the Norman monarch responds by severing a bar of iron which lies on the floor of his tent. Saladin says, "I cannot do that;" but he takes an eider-down pillow from the sofa, and, drawing his keen blade across it, it falls in two pieces. Richard says, "This is the black art; it is magic; it is the devil: you cannot cut that which has no resistance;" and Saladin, to show him that such is not the case, takes a scarf from his shoulders, which is so light that it almost floats in the air, and, tossing it up, severs it before it can descend. George Thompson told me he saw a man in Calcutta throw a handful of floss-silk into the air, and a Hindoo sever it into pieces with his sabre. We can produce nothing like this.

Taking their employment of the mechanical forces,

and their movement of large masses from the earth, we know that the Egyptians had the five, seven, or three mechanical powers; but we cannot account for the multiplication and increase necessary to perform the wonders they accomplished.

In Boston, lately, we have moved the Pelham Hotel, weighing fifty thousand tons, fourteen feet, and are very proud of it; and since then we have moved a whole block of houses twenty-three feet, and I have no doubt we will write a book about it: but there is a book telling how Domenico Fontana of the sixteenth century set up the Egyptian obelisk at Rome on end, in the Papacy of Sixtus V. Wonderful! Yet the Egyptians quarried that stone, and carried it a hundred and fifty miles, and the Romans brought it seven hundred and fifty miles, and never said a word about it. Mr. Batterson of Hartford, walking with Brunel, the architect of the Thames tunnel, in Egypt, asked him what he thought of the mechanical power of the Egyptians; and he said, "There is Pompey's Pillar: it is a hundred feet high, and the capital weighs two thousand pounds. It is something of a feat to hang two thousand pounds at that height in the air, and the few men that can do it would better discuss Egyptian mechanics."

Take canals. The Suez Canal absorbs half its receipts in cleaning out the sand which fills it continually, and it is not yet known whether it is a pecuniary success. The ancients built a canal at right angles to ours; because they knew it would not fill up if built in that direction, and they knew such an one as ours would. There were magnificent canals in the land of the Jews, with perfectly arranged gates and sluices. We have only just begun to understand ventilation properly for our houses; yet late experiments at the

Pyramids in Egypt show that those Egyptian tombs were ventilated in the most perfect and scientific manner.

Again: cement is modern, for the ancients dressed and joined their stones so closely, that, in buildings thousands of years old, the thin blade of a penknife cannot be forced between them. The railroad dates back to Egypt. Arago has claimed that they had a knowledge of steam. A painting has been discovered of a ship full of machinery, and a French engineer said that the arrangement of this machinery could only be accounted for by supposing the motive power to have been steam. Bramah acknowledges that he took the idea of his celebrated lock from an ancient Egyptian pattern. De Tocqueville says there was no social question that was not discussed to rags in Egypt.

"Well," say you, "Franklin invented the lightning-rod." I have no doubt he did; but years before his invention, and before muskets were invented, the old soldiers on guard on the towers used Franklin's invention to keep guard with; and if a spark passed between them and the spear-head, they ran and bore the warning of the state and condition of affairs. After that you will admit that Benjamin Franklin was not the only one that knew of the presence of electricity, and the advantages derived from its use. Solomon's Temple, you will find, was situated on an exposed point of the hill: the temple was so lofty that it was often in peril, and was guarded by a system exactly like that of Benjamin Franklin.

Well, I may tell you a little of ancient manufactures. The Duchess of Burgundy took a necklace from the neck of a mummy, and wore it to a ball given at the Tuileries; and everybody said they thought it was the newest thing there. A Hindoo princess came into

court; and her father, seeing her, said, "Go home, you are not decently covered,—go home;" and she said, "Father, I have seven suits on;" but the suits were of muslin, so thin that the king could see through them. A Roman poet says, "The girl was in the poetic dress of the country." I fancy the French would be rather astonished at this. Four hundred and fifty years ago, the first spinning-machine was introduced into Europe. I have evidence to show that it made its appearance two thousand years before.

Well, I tell you this fact to show that perhaps we don't invent just every thing. Why did I think to grope in the ashes for this? Because all Egypt knew the secret, which was not the knowledge of the professor, the king, and the priest. Their knowledge won an historic privilege which separated them from and brought down the masses; and this chain was broken when Cambyses came down from Persia, and by his genius and intellect opened the gates of knowledge, thundering across Egypt, drawing out civilization from royalty and priesthood.

Such was the system which was established in Egypt of old. It was four thousand years before humanity took that subject to a proper consideration; and, when this consideration was made, civilization changed her character. Learning no longer hid in a convent, or slumbered in the palace. No! she came out, joining hands with the people, ministering and dealing with them.

We have not an astrology in the stars, serving only the kings and priests: we have an astrology serving all those around us. We have not a chemistry hidden in underground cells, striving for wealth, striving to change every thing into gold. No: we have a chemistry laboring with the farmer, and digging gold out of

the earth with the miner. Ah! this is the nineteenth century; and, of the hundreds of things we know, I can show you ninety-nine of them which have been anticipated. It is the liberty of intellect, and a diffusion of knowledge, that has caused this anticipation.

When Gibbon finished his History of Rome, he said, "The hand will never go back upon the dial of time, when every thing was hidden in fear in the dark ages." He made that boast as he stood at night in the ruins of the Corsani Palace, looking out upon the places where the monks were chanting. That vision disappeared, and there arose in its stead the Temple of Jupiter. Could he look back upon the past, he would see nations that went up in their strength, and down to graves with fire in one hand, and iron in the other hand, before Rome was peopled, which, in their strength, were crushed in subduing civilization. But it is a very different principle that governs this land; it is one which should govern every land; it is one which this nation needs to practise this day. It is the human property: it is the divine will that any man has the right to know any thing which he knows will be serviceable to himself and to his fellow-man, and that will make art immortal if God means that it shall last.

A MONODY
ON THE
DEATH OF WENDELL PHILLIPS.

(From the Century, February, 1891.)

ONE by one they go
Into the unknown dark —
Starlit brows of the brave,
Voices that drew men's souls.
Rich is the land, O Death,
Can give you dead like our dead! —
Such as he from whose hand
The magic web of romance
Slipt, and the art was lost!
Such as he who erewhile —
The last of the Titan brood —
With his thunder the Senate shook;
Or he who, beside the Charles,
Untoucht of envy or hate,
Tranced the world with his song;
Or that other, that grey-eyed seer
Who in pastoral Concord ways
With Plato and Hafiz walked.

II.

Not of them was the man
Whose wraith, through the mists of
night,
Through the shuddering wintry stars,
Has passed to eternal morn.
Fit were the moan of the sea
And the clashing of cloud on cloud
For the passing of that soul!
Ever he faced the storm!
No weaver of rare romance,
No patient framer of laws,
No maker of wondrous rhyme,

No bookman wrapt in his dream.
His was the voice that rang
In the fight like a bugle call,
And yet could be tender and low
As when, on a night in June,
The hushed wind sobs in the pines.
His was the eye that flashed
With a saber's azure gleam,
Pointing to heights unwon!

III.

Not for him were these days
Of clerkly and sluggish calm —
To the petrel the swooping gale!
Austere he seemed, but the hearts
Of all men beat in his breast;
No fetter but galled his wrist,
No wrong that was not his own.
What if those eloquent lips
Curled with the old-time scorn?
What if in needless hours
His quick hand closed on the hilt?
'T was the smoke from the well-w
fields
That clouded the veteran's eyes.
A fighter this to the end!
Ah, if in coming times
Some giant evil arise,
And Honor falter and pale,
His were a name to conjure with!
God send his like again!

THOMAS BAILEY ALDRICH

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